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## RESULTS OF THE ARCHBOLD EXPEDITIONS. NO. 30

### NEW CATFISHES FROM NORTHERN NEW GUINEA

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The Indisch-Amerikaansche Expeditie (Richard Archbold 1938-1939 New Guinea Expedition) has brought to The American Museum of Natural History a considerable series of fresh-water fishes taken near their Bernhard Camp, on the Idenburg River, Netherland New Guinea. These were largely obtained from different small tributary streams by the use of poison, and give a comprehensive idea of the fish fauna in such localities of this region. Gobies, mostly eleotrin gobies, are most abundant, melanotaeniids and apogonids numerous, there are a fair number of catfishes, and otherwise but a single pair of *Zenarchopterus* represented in this material.

The melanotaeniids comprise three species, *Melanotaenia multisquamata* Weber and de Beaufort, *Rhombattractus vanheurni* Weber and de Beaufort, and *Chilatherina fasciata* (Weber), all previously recorded from the Idenburg River (Weber and de Beaufort, 1922, Fishes Indo-Australian Archipel., IV).

On the other hand, it appears from Weber and de Beaufort, 1913 (*op. cit.*, II) that the catfishes from this river have not previously been studied, and at least three out of the four forms represented are undescribed.

#### *Copidoglanis idenburgi*, new species

DESCRIPTION OF TYPE.—No. 15034 American Museum of Natural History, from Bernhard Camp (altitude 75 meters), Idenburg River, Netherland New Guinea, April, 1939, collected by Richard Archbold and W. B. Richardson.

Length (total 210 mm.) to base of caudal, 192 mm. Depth in this length, 5; head, 4.7. Eye in head, 6.5; snout, 2.2; interorbital, 3.2; width of head, 1.5; width of mouth, 2; nasal barbel, 1.5; dorsal spine, 2.1; pectoral spine, 2.7; pectoral fin, 1.6; ventral 2.2; longest dorsal rays, 3.6; anal rays, 2.6; caudal 2.

Dorsal rays, I, 4—45 or 55; caudal, about 15; anal, about 80. Gill-rakers, 7 + 21. The end

of the snout is slightly raised; behind this the profile is evenly slightly convex to the dorsal origin, with greatest depth of body about under dorsal axil. The dorsal origin is behind the pectoral axil, dorsal fin well before the ventrals. The pectorals fall well short of the vertical from ventral origin, the ventrals extend beyond the anal origin. A low keel extends the length of the back between dorsals, wherein rays first become appreciable at a point rather nearer the first dorsal than the base of the caudal. Dorsal and pectoral spines slender, smooth in front, smooth or very slightly roughened behind. The tip of the nasal barbel reaches back to well behind the eye. The edge of the membrane on the inner face of the first gill arch is deeply fluted into more or less independent lobes.

Color purplish gray, upper barbels, dorsals, upper surface of pectorals and border of ventrals and anal darker, lower barbels and lips to ventrals paler; teeth pale, slightly brownish. This is our only specimen of this, which from technical characters seems related to *C. ater*, though superficially it little resembles that species (as figured by Weber and de Beaufort, 1913, p. 237).

#### *Copidoglanis novae-guineae niger*, new subspecies

Closest to *C. novae-guineae* (with a specimen of which it has been compared) in characters as well as geographically, but deeper bodied, with higher fins, and blacker in color, superficially resembling more *C. brevidorsalis* (with a specimen of which it has been compared) and *C. ater* (as figured by Weber and de Beaufort, 1913, p. 237).

Dorsal and pectoral spines totally osseous, rather small, little or not serrate, the pectoral shorter than the dorsal; gill-rakers 4—6 + 12—13, the membrane on the inner face of the first gill arch slightly fluted, to essentially entire as figured for *C. novae-guineae* (Weber and de Beaufort, 1913, p. 236); nasal barbel slightly shorter than head, reaching to, or almost to, the hind-border of the operculum. Depth about 4.5 (3 specimens 129 to 190-mm. standard length) to 5.4 (a smaller specimen of 100 mm.). Head, 4.7 to 5.3; eye in head, 5.2 to 6; nasal barbel, 1.1 to 1.3; dorsal spine 1.8 to 2, slightly serrate or roughened in front, smooth behind;

pectoral spine, 2 to 2.5, smooth to slightly roughened in front, smooth behind. First dorsal, I, 4 or 5; anal, about 82 to 87, average 85  $1\frac{1}{2}$ . In specimens of 171 and 190-mm. standard length the keel of the second dorsal is restricted, the intangible point where its rays begin 2.4 to 3.5 times as distant from the axil of the first dorsal as from the base of the caudal, and not more than 25 or 35 dorsal rays may be estimated. In smaller specimens of 100 and 129 mm. the keel extends further forward, this point is only 1.6 to 1.7 times as distant, and some 40 rays may be estimated. Color blackish or dark purplish gray, breast slightly paler, fins and barbels darker, teeth whitish. Four specimens, 100 to 190-mm. standard length.

DESCRIPTION OF TYPE.—No. 15035 American Museum of Natural History, from Bernhard Camp (altitude 75 meters), Idenburg River, Netherland New Guinea, April, 1939, collected by Richard Archbold and W. B. Richardson.

Length (total 212 mm.) to base of caudal, 190 mm. Depth in this length, 4.5; head, 4.7. Eye in head, 6; snout, 2.3; interorbital, 2.5; width of head, 1.5; width of mouth, 2.1; nasal barbel, 1.3; dorsal spine, 1.8; pectoral spine, 2; ventral, 2.3; longest rays of second dorsal, 2.1, of anal, 1.8, of caudal, 1.5.

Dorsal rays, I, 4—about 35; caudal, about 9; anal, about 87. Gill-rakers, 6 + 13.

The profile slants up evenly to the dorsal origin, at about which point the greatest depth of the body lies. The dorsal origin is slightly behind the pectoral axil and well in front of the anal origin. The pectorals extend to over the ventral axil, the ventrals to beyond the anal origin. The second dorsal originates in a low keel, its origin 2.4 times as distant from the first dorsal as from the caudal base. Dorsal and pectoral spines slightly roughened in front near the tip, otherwise smooth. The tip of the nasal barbel almost reaches that of the opercular flap. The edge of the membrane on the inner face of the first gill-arch is slightly fluted.

Color blackish with purplish cast, breast slightly paler, fins and barbels darker; anal indistinctly marbled; teeth whitish.

There are a number of young *Copidoglanis* of some 50 to 75 mm. which vary a good deal among themselves and are too small for satisfactory determination. Four of 53 to 74 mm., paler or darker neutral gray, whitish from chin to ventrals, with blackish fins, and an 84-mm. fish with color similar to the larger specimens described, have been selected for comparison as referable to this form with reasonable certainty. Their dorsal spine is slightly serrate in front, usually smooth but in one or two cases slightly notched behind, pectoral spine smooth except in one case very slightly serrate in front. The origin of the

second dorsal is still farther forward in those from 53 to 74 mm., only 1.4–1.5 times as distant from the axil of the first dorsal as base of caudal; and in one the keel in which it originates runs far forward of its origin to not far behind the first dorsal. The depth of specimens 66 to 84 mm. long varies from 5 to 5.5, but that of the 53-mm. specimen is again 4.5; evidence, assuming the identifications to be correct, that the species passes into an elongate phase at around 60 mm. and out of it again at perhaps around 115 mm.

There is also with the same data a puzzling specimen of *Copidoglanis* (Amer. Mus. Nat. Hist. No. 15037) comparable in size to the larger *C. n. niger*, which it also matches in most details, but with lower fins and the color of *C. idenburgi*, giving it a superficial resemblance to that form. I would place it as an aberrant *niger*, which seems the best course to pursue with this single specimen, with confidence, but that the membrane of the inner face of its first gill-arch is represented by a row of more or less independent lobes, thus resembling *C. idenburgi* and *C. ater* (as figured by Weber and de Beaufort, 1913, p. 236) rather than *C. novae-guineae*. It is perhaps a third recognizable form found in the Idenburg River, or a hybrid, and may be described as follows.

Length (total 190 mm.) to base of caudal, 170 mm. Depth in this length, 4.5; head, 5. Eye in head, 5.7; snout, 2.5; interorbital, 2.4; width of head, 1.5; width of mouth, 2.1; nasal barbel, 1.2; dorsal spine, 2; pectoral spine, 2.2; ventral, 2.3; longest dorsal rays, 2.6; anal rays, 2.2; caudal rays, 1.8.

Dorsal, I, 5—about 45; caudal, about 10; anal, about 78. Gill-rakers, 6 + 14.

The profile slants up evenly to the dorsal origin, at about which point the greatest depth of the body lies. The dorsal origin is slightly behind the pectoral axil and well in front of the anal origin. The second dorsal origin is difficult to place in a long low keel, 1.9 times as distant from the first dorsal as from the caudal base. Dorsal and pectoral spines not appreciably serrate. The tip of the nasal barbel almost reaches that of the opercular flap. Color purplish gray, paler on breast, barbels and margins of fins more or less dusky; teeth pale, slightly brownish.

#### *Arius microstomus*, new species

There are two small specimens (72 and 137 mm. long) with the same data, of the large and

difficult genus *Arius*, presumably representing an undescribed form, though lack of adequate material for comparison makes their status tentative. They resemble *Arius thalassinus* (as described and figured in Weber and de Beaufort, 1913, pp. 274, 286, Figs. 106, 114), having similar bands of teeth in the jaws, a large patch of pointed or villiform teeth extending well back and covering most of the palate (I can find no lines of demarcation separating this into independent patches), similar proportions of body, eye, fins, barbels, occipital and humeral processes, etc. The chances of this marine form occurring in these waters are, however, exceedingly remote, and a tangible difference is to be found in 12 versus 9 gill-rakers on the lower limb of the first arch. The snout is notably blunt and mouth small.

**DESCRIPTION OF TYPE.**—No. 15041 American Museum of Natural History, from Bernhard Camp, Idenburg River, Netherland New Guinea, May, 1939, collected by Richard Archbold and W. B. Richardson.

Length to base of caudal, 137 mm. Depth in this length, 4.6; head, 3.7. Eye in head, 4.3; snout, 2.8; interorbital, 2.1; width of mouth, 2.5; width of head, 1.4; maxillary barbel, 1.1 (reaching to posterior corner of gill-cover or base of pectoral); depth of peduncle, 3.4; its length, 1.7; dorsal spine, broken; pectoral spine, 1.5 (in the smaller specimen dorsal spine, 1.2, pectoral spine, 1.5); base of dorsal, 2.6; base of adipose, 4 (its lobe 1.5 in its base); ventrals, 2; longest anal ray, 2.8; upper caudal lobe (the longer), 1.1.

Dorsal rays, I, 6 (I, 7 in the smaller specimen); anal rays, 18. Gill-rakers (lower limb), 12.

Snout blunt, its profile from above, to the first third of the eye, about a semicircle; snout projecting very slightly beyond the curved, transverse mouth; interorbital slightly convex; free margin of gill membranes evenly curved across beneath the isthmus, the curve at their junction much wider than a right angle. Pectoral spine flat, slightly serrate distally in front and behind (in the smaller specimen both dorsal and pectoral spines are very slightly serrate distally in front and behind); ventrals not quite reaching anal origin; margin of anal appreciably concave; adipose axil slightly in advance of anal axil; caudal deeply forked.

Color dark steel-gray above, pale below.

### ***Hemipimelodus bernhardi*, new species**

Resembles *Hemipimelodus velutinus*, with a specimen of which it has been compared, but

with a notably smaller eye; smaller adipose with more of a free flap, which is slightly less than or equal to versus about one-half the length of its base; more anal rays, etc. Depth of body, 5.7 (at 108 mm.), to 4.6 to 4.3 (at 138 to 170 mm.); head, 3.3 to 3.5; eye, 4.8 (at 108 mm.) to 6 (at 170 mm.); base adipose in head, 4 to 4.5; maxillary barbel a little longer or shorter than head, reaching hind corner of gill-cover or past pectoral base. In the largest specimen the distal part of the dorsal spine is distinctly, of the pectoral spine indistinctly serrate before and behind. Gill-rakers, 6 + 14. Four specimens, 108 to 170-mm. standard length.

**DESCRIPTION OF TYPE.**—No. 15039 American Museum of Natural History, from Bernhard Camp, Idenburg River, Netherland New Guinea, May, 1939, collected by Richard Archbold and W. B. Richardson.

Length to base of caudal, 158 mm. Depth in this length, 4.5; head, 3.4. Eye in head, 5.5; snout, 2.8; interorbital, 2.4; width of mouth, 2.4; width of head, 1.5; width of snout at nostrils, 2.3; depth of snout at nostrils, 5.5; maxillary barbel, 1.1; dorsal spine, 1.5; pectoral spine, 1.8; ventrals, 2; dorsal base, 2.4; adipose base, 4; dorsal interspace, 1.2; longest anal ray, 2.3; caudal lobe, 1.3; depth of peduncle, 3.6; its length, 2.3.

Dorsal rays, I, 7; anal, 18. Gill-rakers, 6 + 14.

Snout region wide, depressed, the snout projecting slightly beyond the transverse mouth; interorbital broad and flat; occipital region slightly angulated; top of head well covered with skin; hind border of eye in the middle of head. Lips rather thick, narrow bands of fine teeth in jaws, none on roof of mouth; free border of gill membranes joining in about a right angle beneath the isthmus; maxillary barbel reaching hind corner of gill-cover, outer mandibular barbel somewhat, the inner much shorter. Dorsal and pectoral spines somewhat rough in front, slightly serrate near the tip behind; axil of small adipose slightly in advance of that of the anal, the free flap long, axil to tip of flap slightly less than its base; ventrals reaching anal origin; caudal deeply forked.

Color dark steel-gray, paler below; lips to ventrals pale; the line between dark and pale runs from the corner of the mouth below the eye and thence curves up slightly on the side of the head. Dorsal, adipose, caudal, anal, and upper surface of pectoral more or less dusky. Maxillary barbel dark, lower barbels partly dusky.

